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<110> Herrmann, Andreas
Dreher, Ingeborg
Moll, Thomas
Zahn, Stefanie

<120> Expression System for Preparing IL-15/Fc Fusion Proteins and Its Use

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<141> 2006-09-07

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<151> 2005-04-13

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caacgatcaa ggcgagttac atgatccccc atgttgtgca aaaaagcggt tagctccttc 6900

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cccactcgtg cacccaactg atcttcagca tcttttactt tcaccagcgt ttctgggtga 7260

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atactcatac tcttcctttt tcaatattat tgaagcattt atcagggtta ttgtctcatg 7380

agcggataca tatttgaatg tatttagaaa aataaacaaa taggggttcc gcgcacattt 7440

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<210> 3
<211> 1113

<212> DNA
<213> Artificial sequence

<220>
<223> DNA for mutated IL-15/Fc with CD5 leader

<400> 3
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caatctatgc atattgatgc tactttatat acggaaagtg atgttcaccc cagttgcaaa 180

gtaacagcaa tgaagtgctt tctcttggag ttacaagtta tttcacttga gtccggagat 240

gcaagtattc atgatacagt agaaaatctg atcatcctag caaacaacag tttgtcttct 300

aatgggaatg taacagaatc tggatgcaaa gaatgtgagg aactggagga aaaaaatatt 360

aaagaatttt tggacagttt tgtacatatt gtcgacatgt tcatcaacac ttcggatccc 420

aaatctgctg acaaaactca cacatgccca ccgtgcccag cacctgaact cctgggggga 480

ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggacccct 540

gaggtcacgt gcgtggtggt ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg 600

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gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc 780

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gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccgtg 960

ctggactccg acggctcctt cttcctctac agcaagctca ccgtggacaa gagcaggtgg 1020

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cagaagagcc tctccctgtc tccgggtaaa tga 1113

<210> 4
<211> 370
<212> PRT
<213> Artificial sequence

<220>
<223> Amino acid sequence of human CRB-15 with CD5 leader

<400> 4

Met Pro Met Gly Ser Leu Gln Pro Leu Ala Thr Leu Tyr Leu Leu Gly

```
1               5                   10                  15

Met Leu Val Ala Ser Cys Leu Gly Asn Trp Val Asn Val Ile Ser Asp
            20                  25                  30

Leu Lys Lys Ile Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr
        35                  40                  45

Leu Tyr Thr Glu Ser Asp Val His Pro Ser Cys Lys Val Thr Ala Met
    50                  55                  60

Lys Cys Phe Leu Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp
65                  70                  75                  80

Ala Ser Ile His Asp Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asn
                85                  90                  95

Ser Leu Ser Ser Asn Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys
            100                 105                 110

Glu Glu Leu Glu Glu Lys Asn Ile Lys Glu Phe Leu Asp Ser Phe Val
        115                 120                 125

His Ile Val Asp Met Phe Ile Asn Thr Ser Asp Pro Lys Ser Ala Asp
    130                 135                 140

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
145                 150                 155                 160

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
                165                 170                 175

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
            180                 185                 190

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
        195                 200                 205

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
    210                 215                 220

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
225                 230                 235                 240
```

```
Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
                245                 250                 255

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
            260                 265                 270

Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu
        275                 280                 285

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
    290                 295                 300

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
305                 310                 315                 320

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
                325                 330                 335

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
            340                 345                 350

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
        355                 360                 365

Gly Lys
    370
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<210> 5
<211> 371
<212> PRT
<213> Artificial sequence

<220>
<223> Amino acid sequence of murine IL-15/Fc (human mutated IL-15, murine IgG2A) with CD5 leader

<400> 5

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Met Pro Met Gly Ser Leu Gln Pro Leu Ala Thr Leu Tyr Leu Leu Gly
1               5                   10                  15

Met Leu Val Ala Ser Cys Leu Gly Asn Trp Val Asn Val Ile Ser Asp
            20                  25                  30
```

```
Leu Lys Lys Ile Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr
        35                  40                  45

Leu Tyr Thr Glu Ser Asp Val His Pro Ser Cys Lys Val Thr Ala Met
    50                  55                  60

Lys Cys Phe Leu Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp
65                  70                  75                  80

Ala Ser Ile His Asp Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asn
                85                  90                  95

Ser Leu Ser Ser Asn Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys
            100                 105                 110

Glu Glu Leu Glu Glu Lys Asn Ile Lys Glu Phe Leu Asp Ser Phe Val
        115                 120                 125

His Ile Val Asp Met Phe Ile Asn Thr Ser Asp Pro Arg Gly Pro Thr
    130                 135                 140

Ile Lys Pro Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly
145                 150                 155                 160

Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met
                165                 170                 175

Ile Ser Leu Ser Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu
            180                 185                 190

Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val
        195                 200                 205

His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu
    210                 215                 220

Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly
225                 230                 235                 240

Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile
                245                 250                 255

Glu Arg Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val
```

```
            260                 265                 270

Tyr Val Leu Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr
        275                 280                 285

Leu Thr Cys Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu
    290                 295                 300

Trp Thr Asn Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro
305                 310                 315                 320

Val Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val
                325                 330                 335

Glu Lys Lys Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val
            340                 345                 350

His Glu Gly Leu His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr
        355                 360                 365

Pro Gly Lys
    370
```